

Serial No. 10/569,781

Atty. Doc. No. 2003P11654WOUS

Amendments To The Claims:

1 - 38 (cancelled).

39. (new) A method for controlling the castability of liquid steel, the method comprising:

establishing a first range of relative concentration limits for at least two elements of a melt such that a subsequent casting of the melt will exhibit acceptable mechanical properties;

establishing a second range of relative concentration limits for the at least two elements of the melt as a subset of the first range of relative concentration limits such that the melt is castable; and

controlling chemistry of the melt to within the second range of relative concentration limits.

40. (new) The method of claim 39, further comprising establishing the second range of relative concentration limits between elements of the group consisting of C, Si, Mn, S, Al, N, Zn and O₂.

41. (new) The method of claim 39, further comprising establishing the second range of relative concentration limits between at least one of the group consisting of N/O₂, Zn/O₂, S/Zn, C/Zn, Mn/S, Mn/N, Si/C, Al/C, Si/O₂, S/O₂, Al/O₂, S/C, and N/C.

42. (new) The method of claim 39, further comprising establishing the second range of relative concentration limits between at least one of the group consisting of Si/O₂, S/O₂, Si/O₂, Al/O₂, S/C, and N/C.

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43. (new) The method of claim 39, further comprising:
displaying the first range on a graph illustrating concentrations of a first element along a first axis and concentrations of a second element along a second axis;
displaying the second range on the graph as a sub-area of the first range; and
displaying a measured relative concentration of the first and second elements in the melt as a point on the graph.

44. (new) The method of claim 39 used in a thin-strip continuous casting machine according to a twin-roller casting process.